AKG.EMOTION
EMOTION MICROPHONE SERIES

D 770

Bedienungshinweise . . . . . S. 2
Bitte vor Inbetriebnahme des Gerätes lesen!
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Veuillez lire cette notice avant d'utiliser le système!
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Prima di utilizzare l'apparecchio, leggere il manuale!
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Antes de utilizar el equipo, lea por favor el manual!
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Por favor leia este manual antes de usar o equipamento!

1 Precaution/Description

1.1 Precaution

Please make sure that the piece of equipment your microphone will be connected to fulfills the safety regulations in force in your country and is fitted with a ground lead.

1.2 Unpacking

1 D 770

1 SA 44

Check that the packaging contains all of the components listed above. Should anything be missing, please contact your AKG dealer.

1.3 Optional Accessories

- **MK 9/10** microphone cable: 10 m (30 ft.) 2-conductor shielded cable with 3-pin male and 3-contact female XLR connectors
- **ST 102A, ST 200** floor stands
- **ST 1, ST 12, ST 45** table stands
- **W 880** windscreen

1.4 Features

- Frequency response tailored to miking instruments and backing vocals.
- Built-in windscreen/pop filter for effective suppression of pop and breath noise.
- Doubleflex™ f transducer shock mount reduces handling and cable noise.
- Frequency-independent cardioid polar response for high gain before feedback.
- New Varimotion™ diaphragm technology for brilliant sound.

1.5 Brief Description

The D 770 is a cardioid dynamic microphone. It has been designed primarily as an instrument microphone for rough stage use and for miking up backing vocals. The wide frequency response of the D 770 slightly favors the midfrequency and treble regions and thus ensures good intelligibility. Having a cardioid polar response, the D 770 is most sensitive to sound arriving from in front of it, less sensitive to sound arriving from the sides, and least sensitive to sound arriving from the rear. This polar pattern is virtually the same for all frequencies ("frequency independent"). The D 770 is fitted with a shock absorbing inner grille for transducer protection against damage. The outer grille and a layer of special fabric beneath it form a very effective windscreen that will suppress blowing and wind noise on open-air stages. The D 770 features a gold plated 3-pin male XLR-type connector for optimum electrical contact. You can connect the microphone either to a balanced or an unbalanced microphone input.

2 Wiring

2.1 Circuit Diagram

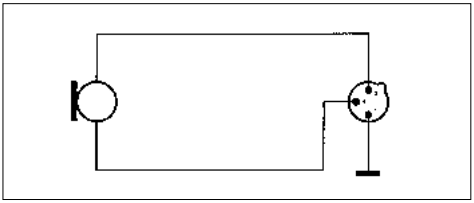


Fig. 1: Microphone circuit diagram.

The microphone provides a balanced output on a 3-pin male XLR connector:

Pin 1: ground
Pin 2: hot
Pin 3: return

You can connect the microphone either to a balanced or an unbalanced microphone input.

2.2 Connecting the Microphone to a Balanced Input

1. Use a commercial XLR cable such as the optional MK 9/10 from AKG.
   The length of these cables does not affect audio quality.

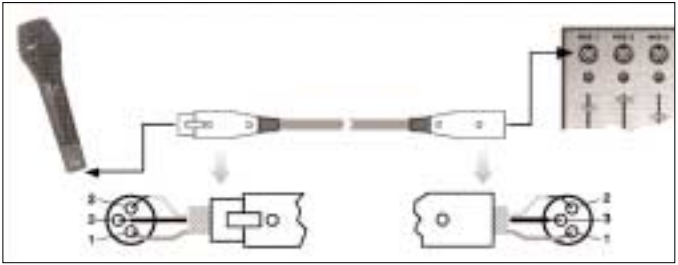


Fig. 2: Using a balanced connecting cable.

2. Plug the female XLR connector on the microphone cable into the male XLR connector on the microphone.
3. Plug the other connector on the microphone

cable into the desired microphone input socket on your mixer or amplifier.

1. To connect the microphone to an unbalanced microphone input (1/4" jack), use a cable with a female XLR connector and a 1/4" TS jack plug. These cables are available at music stores. Please note that unbalanced cables may pick up interference from stray magnetic fields near power or lighting cables, electric motors, etc. like an antenna. This may cause hum or similar noise when you use a cable that is longer than 16 feet (5 m).

2.3 Connecting the Microphone to an Unbalanced Input

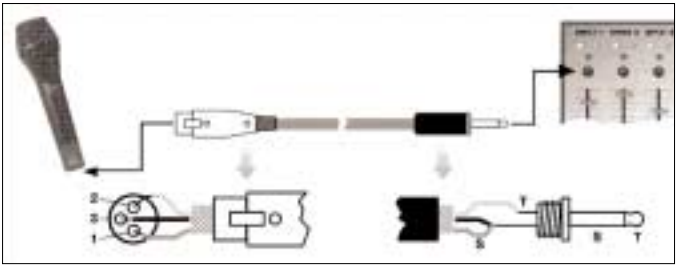


Fig. 3: Using an unbalanced cable.

2. Plug the female XLR connector on the microphone cable into the male XLR connector on the microphone.
3. Connect the 1/4" jack plug on the microphone cable to the desired microphone input jack on your mixer or amplifier.

3 Using Your Microphone

The best way to get the "right" sound is to experiment with microphone placement. The following sections contain useful suggestions.

3.1 Proximity Effect

Please note that moving the microphone closer to the instrument will boost the bass range of the microphone signal. Using this effect, you can create your personal sound by varying the working distance.

3.2 Feedback

Feedback is the result of part of the sound projected by a speaker being picked up by a microphone, fed to the amplifier, and projected again by the speaker. Above a specific volume or "system gain" setting called the feedback threshold, the signal starts being regenerated indefinitely, making the sound system howl and the sound engineer desperately dive for the master fader to reduce the volume and stop the howling.
To increase usable gain before feedback, the microphone has a cardioid polar pattern. This means that the microphone is most sensitive to sounds arriving from in front of it while picking up much less of sounds arriving from the sides or rear (from monitor speakers for instance).

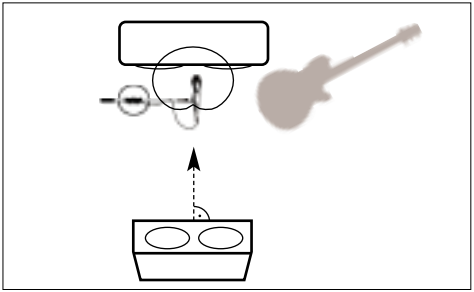


Fig. 4: Microphone placement for maximum gain before feedback.

To maximize gain before feedback, place the main ("FOH") speakers in front of the microphones (along the front edge of the stage).
Be sure never to point any microphone directly at the monitors, or at the FOH speakers.
Feedback may also be triggered by resonances depending on the acoustics of the room or hall. With resonances at low frequencies, proximity effect may cause feedback. In this case, it is often enough to move away from the microphone a little to stop the feedback.

3.3 Flute

Fig. 5: Microphone placement for the flute.

Working distance primarily depends on the kind of music played. For popular and jazz pieces, relatively short distances may be desirable (1 or 2 in.), as the amount of wind and breath noise rises with decreasing working distance. In this case, blow a little below the microphone in order to avoid getting too much noise by blowing at it from an extremely short distance. For classical music, which calls for spatial reproduction, place the microphone about 4 to 8 inches away from the instrument and slightly above it. Aim the D 770 down toward and roughly at right angles to the flute.

3.4 Saxophone

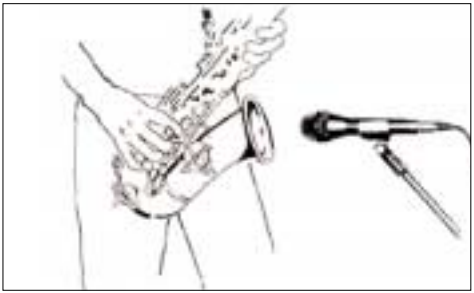


Fig. 6: Microphone placement for the saxophone.

If you consider the noise produced by the keys as characteristic of the saxophone sound or the song, point the microphone at the middle of the instrument.
However, if you want no key noise, direct the microphone toward the front outer rim of the bell.
If you aim the microphone into the bell, you will get too much wind noise.
Optimum working distance is 8 to 12 inches.
On stage, you may have to move as close as 2 inches to the microphone in order to avoid getting feedback or spillover from other instruments. In this situation, make sure not to blow right into the microphone.

3.5 Harmonica

Fig. 7: Using the microphone on the harmonica.

Many harmonica players form a resonant cavity behind the instrument with their hands.
You can achieve certain effects by changing the cavity. Hold the microphone inside the cup you form with your hands.
The D 770 is particularly well suited for this playing technique since it cannot slip away because of the shape of its head, and the built-in windscreen will effectively suppress pop and wind noise.

3.6 Bongos, Congas, Timbales

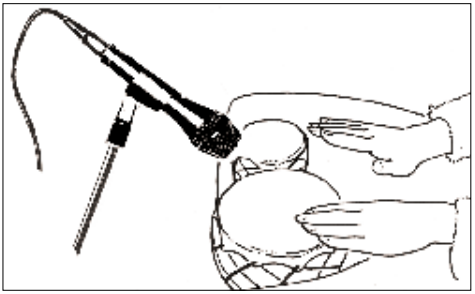


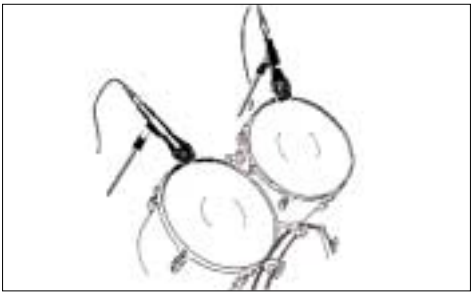
Fig., 8: Microphone placement for the bongos.

Place the microphone as close as possible to the drums, aiming it between the two drums.
Alternatively, you could use two microphones:
Set the microphones up in a "V" forming an angle of about 45 degrees and aim the microphones at the perimeters of the top heads.
Experiment to find out at what working distance you get exactly the amount of attack you want. The closer you place the microphone(s), the punchier the sound will get.

3.7 Guitar Amp

Fig. 9: Microhone placement for a guitar amp.

Loudspeakers radiate high frequencies within a very narrow angle.
Place the microphone about 2 to 6 inches in front of the loudspeaker diaphragm and aim the microphone at the center of the diaphragm.



3.8 Tom-toms, Roto Toms, Snare Drum

Fig. 10: Microhone placement for tom-toms.

1. To prevent the top head from ringing excessively, use adhesive tape to fix a strip of felt or a Kleenex to the skin in an off-center position.

2. Place one D 770 about 2 to 4 inches from the head of each tom.
3. Align the microphone with the perimeter of the top head.

3.9 Backing Vocals

Fig. 11: Microphone placement for backing vocals.

1. Never let more than two persons share a microphone.
2. Ask your backing vocalists never to sing more than 35 degrees off the microphone axis.
   The microphone is very insensitive to off-axis sounds. If the two vocalists were to sing into the microphone from a wider angle than 35 degrees, you may end up bringing up the fader of the microphone channel far enough to create a feedback problem.

4 Cleaning

To clean the microphone case, use a soft cloth moistened with water.

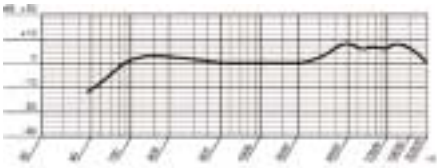
Problem	Possible Cause	Remedy
No sound:	1. Power to mixer and/or amplifier is off. 2. Channel or master fader on mixer, or volume control on amplifier is at zero. 3. Microphone is not connected to mixer or amplifier. 4. Cable connectors are seated loosely. 5. Cable is defective.	1. Switch power to mixer or amplifier on. 2. Set channel or master fader on mixer or volume control on amplifier to desired level. 3. Connect microphone to mixer or amplifier. 4. Check cable connectors for secure seat. 5. Check cable and replace if damaged.

6 Specifications

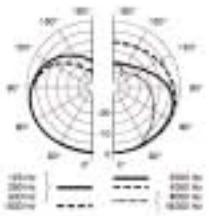
Type:	dynamic pressure gradient microphone
Polar pattern:	cardioid
Frequency range:	60 to 20,000 Hz; 20 to 20,000 Hz at 1 cm
Sensitivity at 1000 Hz:	2.5 mV/Pa (–52 dBV re 1 V/Pa)
Electrical impedance at 1000 Hz:	≤600 Ω
Recommended load impedance:	≥2000 Ω
Max. SPL for 1 % / 3 % THD:	147 dB SPL / 156 dB SPL
Equivalent noise level:	22 dB (A) (DIN 45412)
Environment:	temperature: –10°C to +60°C rel. humidity at +20°C: 95%
Connector:	3-pin XLR
Connector pinout:	pin 1 – ground pin 2 – hot pin 3 – return
Case material:	die-cast metal
Finish:	matte black enamel
Size:	length: 180 mm (7.1 in.) max. dia.: 50 mm (2 in.)
Net/shipping weight:	290 g (10.2 oz.) / 650 g (1.4 lb.)

This product conforms to EN 50 082-1.

Frequency Response



Polar Diagram



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EMOTION MICROPHONE SERIES

D 660 S

D 880

D 880 S

D 440

D 550

D 770

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